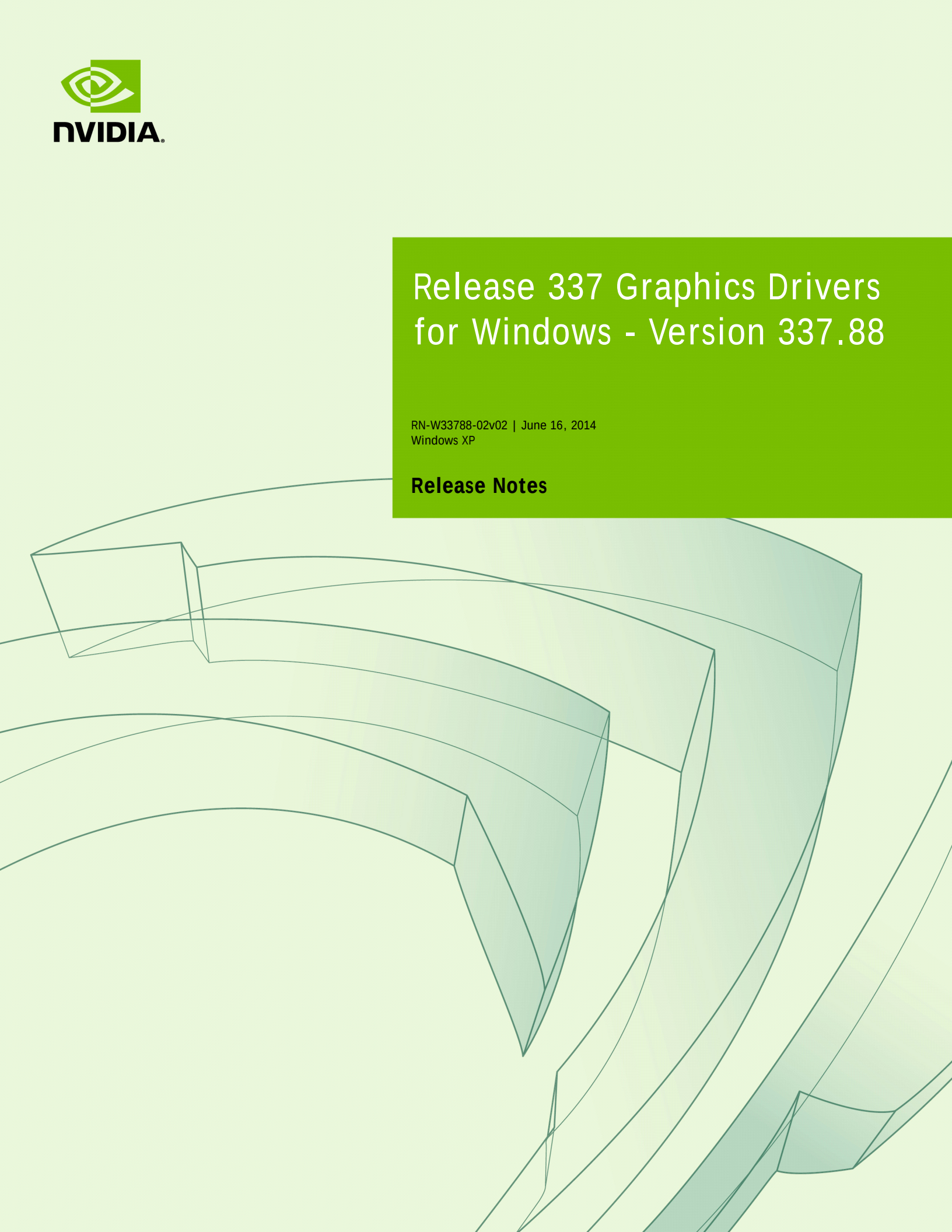

Release 337 Graphics Drivers for Windows - Version 337.88

RN-W33788-02v02 | June 16, 2014
Windows XP

Release Notes

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01 INTRODUCTION TO RELEASE NOTES

This edition of *Release Notes* describes the Release 337 family of graphics drivers (versions 337.xx to 339.xx) for Microsoft® Windows® XP. NVIDIA provides these notes to describe performance improvements and bug fixes in each documented version of the driver.

Structure of the Document

This document is organized in the following sections:

- "Changes in the Release 337 Driver for Windows XP" on page 2 gives a summary of changes, and fixed and open issues in this version.
- "The Release 337 Driver for Windows XP" on page 7 describes the NVIDIA products and languages supported by this driver, the system requirements, and how to install the driver.
- "Mode Support for Windows" on page 27 lists the default resolutions supported by the driver.

Changes in this Edition

This edition of the *Release Notes* for Windows XP includes information about NVIDIA graphics driver version 337.88, and lists changes made to the driver since Release 325 version 335.28. These changes are discussed beginning with the chapter "Changes in the Release 337 Driver for Windows XP" on page 2.

02 CHANGES IN THE RELEASE 337 DRIVER FOR WINDOWS XP

This chapter describes open issues for version 337.88, and resolved issues and driver enhancements for versions of the Release 337 driver up to version 337.88.

The chapter contains these sections:

- "Version 337.88 Highlights" on page 3
- "Open Windows XP Issues in Version 337.88" on page 1
- "Not NVIDIA Issues" on page 3
- "Known Product Limitations" on page 17

Version 337.88 Highlights

This section provides highlights of version 337.88 of the NVIDIA Release 337 Driver.

- What's New in Version 337.88
- What's New in Release 337
- Limitations in This Release
- Unsupported Features Under Windows XP
- Advanced Driver Information

What's New in Version 337.88

This 337.88 Game Ready, NVIDIA Qualified, driver ensures you'll have the best possible gaming experience for Watch Dogs and can provide a significant performance gain in a variety of other titles.

See also "What's New in Release 337" on page 5.

Performance

Introduces key DirectX optimizations which result in reduced game-loading times and significant performance increases across a wide variety of games. Results will vary depending on your GPU and system configuration.

Software Modules

- **NVIDIA PhysX System Software - version 9.13.1220**

  NVIDIA GPU PhysX acceleration is available only on systems with GeForce 8-series and later GPUs with a minimum of 256 MB dedicated graphics memory.

  NVIDIA GPU PhysX acceleration is not available if there is a non-NVIDIA graphics processor in the system, even if it is not used for rendering.

- **HD Audio Driver - version 1.3.30.1**
- **GeForce Experience - 14.6.6.0**

Profile Updates

SLI Profiles

- **Battlefield 4 -** ***added EXE names to support CTE version;***
- **Bound By Flame -** ***corrected EXE name;***
- **Call of Duty Online -** ***added SLI profile, disabled CPL AA;***
- **Dark Souls II -** ***added SLI, AA profiles;***
- **Daylight -** ***added SLI profile;***
- **DayZ -** ***disabled NVIDIA Control Panel AA***
- **EverQuest Next Landmark -** ***updated EXE names***
- **Icarus -** ***added SLI profile;***
- **Planetside 2 -** ***added EXE names***
- **Smite -** ***added DirectX 11 SLI profile;***
- **Sniper Elite 3 -** ***added SLI profile;***
- **Trials Fusion -** ***disabled SLI***
- **Watch Dogs -** ***corrected SLI profile to match new engine behavior;***
- **Wildstar -** ***added SLI profile;***
- **Windborne -** ***added SLI profile***
- **World of Tanks -** ***corrected SLI profile to match new engine behavior.***

Gaming

- Enables GeForce ShadowPlay™ technology
- Supports GeForce ShadowPlay™ Twitch Streaming
- Enables NVIDIA GameStream™ technology for NVIDIA SHIELD™

What's New in Release 337

The section summarizes the driver changes in Release 337:

Performance Boost

Introduces key DirectX optimizations which result in reduced game-loading times and significant performance increases across a wide variety of games. Results will vary depending on your GPU and system configuration.

NVIDIA Control Panel

- **Shader Cache**: 3D Settings->Manage 3D Settings Page

  Added *Shader Cache* setting to reduce CPU usage by saving compiled shaders to a disk cache. This may improve performance and reduce the time it takes for a game to load.

NVIDIA SLI Technology

Added or updated the following profiles:

- **Battlefield 4 -** ***added EXE names to support CTE version;***
- **Bound By Flame -** ***corrected EXE name;***
- **Call of Duty Online -** ***added SLI profile, disabled CPL AA;***
- **Dark Souls II -** ***added SLI, AA profiles;***
- **Daylight -** ***added SLI profile;***
- **DayZ - d*isabled NVIDIA Control Panel AA***
- **Diablo III -** ***updated profile***
- **EverQuest Next Landmark -** ***updated EXE names***
- **Icarus -** ***added SLI profile;***
- **Planetside 2 -** ***added EXE names***
- **Smite -** ***added DirectX 11 SLI profile;***
- **Sniper Elite 3 -** ***added SLI profile;***
- **Total War: Rome II -** ***added profile***
- **Trials Fusion -** ***disabled SLI***
- **War Thunder -** ***added profile***
- **Watch Dogs -** ***updated profile***
- **Wildstar -** ***added SLI profile;***
- **Windborne -** ***added SLI profile***
- **World of Tanks -** ***updated SLI profile.***

Limitations in This Release

The following are features that are not currently supported or have limited support in this driver release:

- **Support for Notebook PCs**

  Starting with Release 270 drivers, NVIDIA Verde drivers for notebook PCs will only be available for Windows Vista and Windows 7. Notebooks running Windows XP are supported by the latest Release 266 WHQL-certified driver here: http://www.nvidia.com/object/notebook-winxp-266.58-whql-driver.html.

- **SLI Support**

  The following SLI features are not support on Windows XP:

  - GeForce GTX 680 SLI
  - Quad SLI technology using GeForce GTX 590, GeForce 9800 GX2 or GeForce GTX 295
  - 3-way SLI technology
  - Hybrid SLI
  - SLI multi-monitor support

- **Negative LOD Bias Clamp**

  Negative LOD bias clamp for DirectX applications is not supported on Fermi-based GPUs and later.

- **Legacy Support for GeForce 6-series and GeForce 7-series GPUs**

  GeForce 6-series and GeForce 7-series GPUs have moved to legacy support with the GeForce R304 drivers. These products are no longer supported beginning with the GeForce R310 drivers.

Unsupported Features Under Windows XP

The following are either features that are not supported under Windows XP, or feature limitations that exist under Windows XP:

Kepler GPU Limitations

- Multi-display support

  The 4-display support of Kepler GPUs[1] is not available under Windows XP. Multi-display support is limited to two displays per Kepler GPU.

- SLI Support
  - There is no support for SLI frame rendering (AFR/SFR) or SLI FSAA.

Unsupported Features

- DisplayPort 1.2 functionality is not supported, including increased bandwidth (HBR2 mode) and multi-display streaming.
- 4kx2k@60Hz tiled displays are not supported.

1. Examples of Kepler GPU products include the NVIDIA GeForce GTX 680, GTX 690, and GeForce GTX TITAN.

Advanced Driver Information

This section contains the following additional information about the driver:

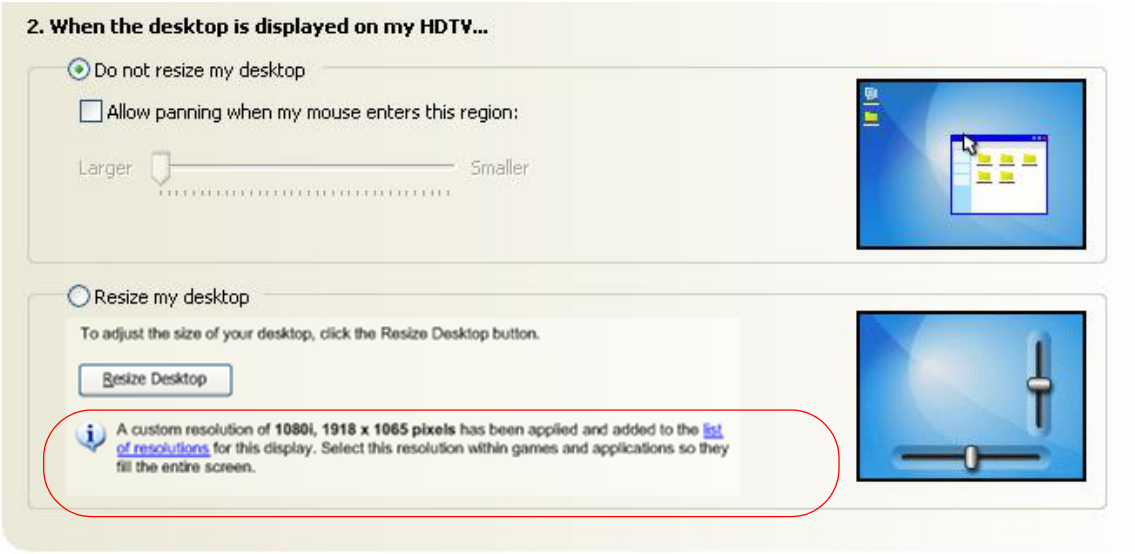
- Help for Resizing Your HDTV Desktop
- Understanding Dynamic GPU Performance Mode

Help for Resizing Your HDTV Desktop

After resizing the HDTV desktop, the new custom resolution created is now added to the list of available resolutions for that display, and also added to the resolution list within the game or application.

In Release 190 and later drivers, the method for resizing the HDTV desktop has changed to provide better image quality when applying underscan. This method results in a new custom resolution being created which needs to be selected from games or applications to apply the resizing.

In the example displayed in the following screenshot, the underscan has created a new resolution (1918x1065). Although this resolution looks different, it is still in HD format. Remember to select this resolution in your game or other application in order to take advantage of it.


2. When the desktop is displayed on my HDTV...
Do not resize my desktop
Allow panning when my mouse enters this region:
Larger
Smaller
Resize my desktop
To adjust the size of your desktop, click the Resize Desktop button.
Resize Desktop
A custom resolution of 1080i, 1918 x 1065 pixels has been applied and added to the list of resolutions for this display. Select this resolution within games and applications so they fill the entire screen.

Note: Some games or applications may not support the new resolution.

Understanding Dynamic GPU Performance Mode

With the Release 280 drivers, NVIDIA GPU clock speeds will increase more quickly in response to increased graphics demands. Conversely, with lower graphics use the GPU clock speed slows down more quickly, conserving as much power as possible.

In the Release 280 drivers, some users reported a noticeable fluctuation in clock speeds while engaging in various tasks on the PC. With the Release 285 and later drivers, adjustments have been made to reduce the sensitivity to levels similar to the R275 driver.

Open Windows XP Issues in Version 337.88

As with every released driver, version 337.88 has open issues and enhancement requests associated with it. This section includes lists of issues that are either not fixed or not implemented in this version. Some problems listed may not have been thoroughly investigated and, in fact, may not be NVIDIA issues. Others may have workaround solutions.

- "NVIDIA Recommendations" on page 1
- "Windows XP 32-bit Issues" on page 1

NVIDIA Recommendations

- Single display modes such as TV-only, DFP/LCD-only, or CRT-only provide the best performance and quality from Windows Media Center Edition.

  Dual display modes such as Dualview and nView Clone and Span modes are not recommended when using the Windows Media Center.

Windows XP 32-bit Issues

NVIDIA Issues—Single-GPU

- [NVIDIA Control Panel]: On the *Manage 3D Settings* page, if an executable name is added for an application that does not have a pre-existing profile, the application icon does not appear in the list.

  To workaround, close and then re-open the NVIDIA Control Panel.

GeForce 400 Series

- GeForce 400/200 Series: Borderlands–while playing the game with ambient occlusion enabled and Dynamic Shadows turned on, shadow corruption occurs when changing the game resolution. [646331]

NVIDIA Issues—Multi-GPU

GeForce 200 Series GPUs

- [Multi-GPU][GeForce 200 series][Dirt3]: With Multi-GPU enabled, the game crashes after the intro video with the error message "dt3_game.exe has encountered a problem and needs to close". [956667]

GeForce 8 Series GPUs

- [SLI], GeForce 8600 GT: Battlefield 2–there is texture corruption on the wall in "Gulf Of Oman" map. [350931]

- [SLI], GeForce 8300/8400/8500/8600: Blue-screen crash occurs when using the Set SLI Output control to switch from a display on the SLI master GPU to a display on the SLI slave GPU.

  This occurs with "bridgeless" SLI configurations. When there is no SLI bridge connector, you can use only the displays connected to the SLI master GPU.

Not NVIDIA Issues

This section lists issues that are not due to the NVIDIA driver.

- "Application Issues" on page 3
- "Not NVIDIA Issues–SLI Mode" on page 6

Application Issues

All GPUs

- Dark Void–if you experience issues playing Dark Void, NVIDIA recommends the following steps:
  a. Install all game patches.

     Retail box owners can get the patch here: http://download.nvidia.com/downloads/nZone/patches/DarkVoid_PhysX_Update_Patch.exe
  b. From the Windows Control Panel->Add/Remove programs, uninstall **NVIDIA Game System Software 2.8.1**.
  c. From the Windows Control Panel->Add/Remove programs, right-click **NVIDIA PhysX** and then click **Repair**.

  If you still experience problems after performing these steps, then either enable V-Sync or skip the cut-scenes by pressing [**Enter**] twice at the cut-scene.
- Adobe Flash 10.x/11.x–1080p video content stutters during browser playback in full-screen mode.

  The issue is resolved with Flash 11.0.1.83 and later.
- Dual Core CPU: Counter Strike 1.6 hangs if you play Cheating Death 4.33.4 at same time.

  This application does not properly recognize dual-core CPUs.
- Counter-Strike Source frame rate is jumpy.

  Jittery/lagging movement has been seen when starting a game after running the Video Stress Test.

  Smooth movement is restored after exiting and then restarting the application. The issue does not appear when creating a new game, disconnecting, and then creating another new game.
- HQV DVD playback is bobbing when running in overlay mode.[272289]

  This is not an NVIDIA bug, but rather an issue with the Intervideo decoder in WinDVD 8.
- During DVD and HD DVD/Blu-ray playback, a white screen may appear over video when toggling from windowed to full-screen mode. [263449]

  This issue was reported in driver v96.94 as an NVIDIA driver issue, but now appears to be an application issue with PowerDVD. NVIDIA is working with the application developer to provide a fix.
- Sims 2–"Smooth Edges (AA)" option is not available with Release 100 drivers.[272477]

This occurs because of an incorrect driver version check in the application. NVIDIA has worked around this issue in the operating system by changing the way the driver version is reported to this application.

- Warhammer 40k Dawn of War (all versions) does not run with Release 100 drivers.[273154]

  This occurs because of an incorrect driver version check in the application.

  NVIDIA has worked around this issue in the operating system by changing the way the driver version is reported to this application.

- S.T.A.L.K.E.R. Shadow of Chernobyl: This application is not compatible with the *Override any application setting* or *Enhance the application setting* antialiasing modes from the NVIDIA Control Panel Manage 3D Settings page.

  Please use the in-game antialiasing options.

- Splinter Cell Double Agent crashes when loading a single player game.[270517]

  This is an application issue. You can work around this issue by creating a shortcut to launch the game as follows:

  a. Navigate to the game install directory, then change to the sub-folder \SCDA-Offline\system.
  b. Create a shortcut to splintercell4.exe.
  c. Add "-ll" to the command line of the shortcut.
  d. Use this shortcut to launch the single player version of the game.

- Age of Empires 3: Setting application to 1600x1200 with shader quality set to ‘very high’ causes menus and game to become corrupted.

  This issue can be fixed by installing the v1.07 game patch.

- Company of Heroes: Dark transparent band appears when running the in-game performance test.

  This is an application issue and can be reproduced on NVIDIA GeForce 7900 and ATI Radeon X1950 GPUs.

- Elder Scrolls 4 Oblivion: Running at 2560x1600 with NVIDIA Enhanced Application mode 16xQ, extremely rare 1-2 second pauses occur during some fighting. [262685]

  This appears to be an application issue in how large textures are created during the in-game fighting.

- Far Cry: Water reflection on Archive level is not correct. [253431]

  This appears to be an application issue. NVIDIA is working with the application developer to try to patch their application

- Half-Life 2 Lost Coast: Color corruption occurs in the video stress test after changing the display mode.

  This is a known application issue.

- Half-Life 2 Episode One: Gravity Gun has z-fighting problems on certain portions of the gun. [263505]

- Quake4: Random pauses occur during gameplay. [260029]

  This appears to be an application issue that affects testing on Quake4 with dual-core optimizations turned on. Turning off the SMP value in Quake4 eliminates this problem.

- Age of Empires 3: Vertical sliver appears near the right side of the introduction videos. [221738]
- Battlefield 1942 hangs after playing for a few minutes.[265230]

  This is an application issue with dual-core CPUs.

- Counter-Strike–the application crashes to the desktop if the resolution or bit-depth is changed from the in-game video options menu. [416582]

  This is an application issue, and does not occur if you change the resolution or bit-depth from the game's main menu and not while in the game.

GeForce 9 Series GPUs

- GeForce 9500 GT: BioShock–the desktop brightness levels are affected after exiting the game. [443651]

GeForce 8 Series GPUs

- GeForce 8800 GTX: Counter Strike - the game fails to run in windowed mode with resolutions higher than 1280x1024. [403638]

  This is not an NVIDIA bug, but rather an issue with the application.

- GeForce 8800 GT: EverQuest 2–the introduction video does not display when antialiasing is enabled and the resolution is higher than 1600x1200. [355649]
- GeForce 8800 GTX/GeForce 7900 GTX: Neverwinter Nights 2–the minimap loses its background when the resolution is changed.[273788]
- GeForce 8800 GTX: Tabula Rasa–in-game antialiasing does not work. [353867]
- GeForce 8600: Flight Simulator X–corruption appears after restoring from minimize at the default settings. [354345]
- Half-Life 2 Lost Coast: GeForce 8800 GTX fog looks different than GeForce 7900 GTX fog, and dynamic shadows look solid black. [262215]

  The GeForce 8800 GTX image quality matches the Microsoft Reference Rasterizer. This issue may affect other Half-Life 2 based engines such as Counter-Strike Source and Half-Life Episode 1. NVIDIA is working with the application developer to try to patch their application.

- GeForce 8500/8400/8300: Video corruption occurs when playing the Blu-ray disc title "Tom Cruise the Last Samurai" in IVI. [321632]
- *This is not an NVIDIA bug, but rather an issue with the application.*
- GeForce 8800 GTX: Star Wars: Battlefront 2–there is corruption during the training mission when played at high resolutions. [310721]

  This is not an NVIDIA bug, but rather an issue with the application.

Not NVIDIA Issues–SLI Mode

- [SLI], GeForce 8800 GTX: Neverwinter Nights 2– flickering occurs between screen transitions when SLI is enabled.[296352]
- 193105 With SLI enabled, the SLI split line does not appear when VSync is forced on.

  This is not a bug, and the applications are, in fact, running in SLI mode. The SLI split line/load bar is not supposed to appear when Vsync is enabled in SLI mode.

02 THE RELEASE 337 DRIVER FOR WINDOWS XP

This chapter covers the following main topics:

- "About the Release 337 Driver" on page 7
- "Hardware and Software Support" on page 8
- "Driver Installation" on page 13

About the Release 337 Driver

This driver release is from the Release 337 family of drivers (versions 337.xx to 339.xx). This driver package supports the GeForce 6, 7, 8, 9, 100, 200, 300, 400, 500, 600, and 700-series desktop GPUs as well as ION desktop GPUs. See "Supported NVIDIA Desktop Products" on page 8 for the list of specific products supported in this release.

Hardware and Software Support

Supported Operating Systems

This Release 337 driver includes drivers designed for the following Microsoft® operating systems:

- Microsoft Windows® XP
  - Windows XP Media Center Edition 2005 Update Rollup2
  - Windows XP Media Center Edition 2005
  - Windows XP Media Center Edition 2004
  - Windows XP Professional
  - Windows XP Home Edition
  - Windows XP Professional x64 Edition

Supported NVIDIA Desktop Products

Table 2.1 lists the NVIDIA GPUs supported by this Release 337 driver.

Table 2.1 Supported NVIDIA Consumer Products

Product
ION
ION LE
GeForce GTX TITAN Black
GeForce GTX TITAN
GeForce GTX 780
GeForce GTX 780 Ti
GeForce GTX 770
GeForce GTX 760
GeForce GTX 760 Ti (OEM)
GeForce GTX 750 Ti
GeForce GT 730
GeForce GTX 680
GeForce GTX 670
GeForce GTX 660 Ti
GeForce GTX 660
GeForce GTX 650 Ti

Table 2.1 Supported NVIDIA Consumer Products (continued)

Product
GeForce GTX 650
GeForce GT 645
GeForce GT 645
GeForce GT 640
GeForce GT 630
GeForce GT 620
GeForce GT 610
GeForce G 605
GeForce GTX 590
GeForce GTX 580
GeForce GTX 570
GeForce GTX 560 SE
GeForce GTX 560
GeForce GTX 560 Ti
GeForce GTX 555
GeForce GTX 550 Ti
GeForce GTX 480
GeForce GTX 470
GeForce GTX 465
GeForce GTX 460 SE and 460 SE v2
GeForce GTX 460 v2
GeForce GTX 460
GeForce GTX 295
GeForce GTX 285
GeForce GTX 280
GeForce GTX 275
GeForce GTX 260
GeForce GTS 450
GeForce GTS 250
GeForce GTS 240
GeForce GT 545
GeForce GT 530
GeForce GT 520
GeForce GT 430
GeForce GT 340

Table 2.1 Supported NVIDIA Consumer Products (continued)

Product
GeForce GT 330
GeForce GT 320
GeForce GT 240
GeForce GT 200
GeForce G210
GeForce 405
GeForce 210
GeForce 205
GeForce GTS 150
GeForce GT 130
GeForce GT 120
GeForce G100
GeForce 9800 GX2
GeForce 9800 GTX+
GeForce 9800 GTX
GeForce 9800 GT
GeForce 9600 GT
GeForce 9600 GS
GeForce 9600 GSO
GeForce 9500 GT
GeForce 9500 GS
GeForce 9400 GT
GeForce 9400
GeForce 9300 GS
GeForce 9300 GE
GeForce 9300
GeForce 9200
GeForce 8800 Ultra
GeForce 8800 GTX
GeForce 8800 GTS 512
GeForce 8800 GTS
GeForce 8800 GT
GeForce 8600 GTS
GeForce 8600 GT
GeForce 8600 GS

Table 2.1 Supported NVIDIA Consumer Products (continued)

Product
GeForce 8500 GT
GeForce 8400 GS
GeForce 8400 SE
GeForce 8400
GeForce 8300 GS
GeForce 8300
GeForce 8200
GeForce 8100/NVIDIA nForce 720a
NVIDIA nForce 780a

Supported Languages

The Release 337 Graphics Drivers supports the following languages in the main driver Control Panel:

English (USA)	German	Portuguese (Euro/ Iberian)
English (UK)	Greek	Russian
Arabic	Hebrew	Slovak
Chinese (Simplified)	Hungarian	Slovenian
Chinese (Traditional)	Italian	Spanish
Czech	Japanese	Spanish (Latin America)
Danish	Korean	Swedish
Dutch	Norwegian	Thai
Finnish	Polish	Turkish
French	Portuguese (Brazil)	

Driver Installation

System Requirements

The hard disk space requirement for 32 bit is minimum 150 MB for English-only, and 230 MB for International.

The hard disk space requirement for 64 bit is minimum 207 MB for English-only, and 300 MB for International.

Before You Begin

If you do not have System Administrator access privileges, it is assumed that the appropriate person with System Administrator access in your organization will set up and install the NVIDIA graphics driver software on your computer.

nTune

- **If NVIDIA nTune is already installed**

  If you have previously installed NVIDIA nTune, NVIDIA recommends that you uninstall nTune before installing this driver. After the driver install is complete, you can reinstall nTune.

Copied Files and Registration

- The installation process copies all necessary files for operation into the appropriate directories.
- The nView system files are copied to your **`Windows\System`** directory.
- nView Desktop Manager Profile files (*.**tvp**) are saved in the **`Windows\Nview`** directory.

  Depending on the version of the NVIDIA driver previously installed, profiles may also be located in the **`Documents and Settings\All Users\Application Data\nView_Profiles`** directory.
- As part of the install process, an uninstall is registered in your system.

Preserving Settings Before Upgrading Your Software

Before uninstalling or installing software, your can preserve your nView Desktop Manager and/or NVIDIA Display settings by using the nView Desktop Manager Profiles features.

Note: Follow the steps below and/or refer to the *NVIDIA nView Desktop Manager User's Guide* for details. Under Windows XP/2000 and Windows NT 4.0, you must have, at least, **Power User** access privileges in order to create or save a profile. (Refer to Windows Help if you need an explanation of Power User access rights.)

Follow the steps below and/or refer to the *NVIDIA nView Desktop Manager User's Guide* for details.

1. Open the nView Desktop Manager Profiles page.
2. To preserve your current settings, you can use either the **Save** or the **New** option from the nView Desktop Manager Profiles page:
   - If you want to overwrite the currently loaded profile with your changed settings, use the **Save** option. Notice that a warning message indicates that you are about to overwrite the selected profile.
   - If you want to retain the currently loaded profile and want to save your changed settings to a new file, click the **New** option. Enter a name and description of the profile in the New Profile dialog box. For example, you can name this profile **`My Settings`**.
3. If you are an "advanced" user and want to customize certain settings in the saved profile, click **Advanced** << to expand the dialog box.
4. To customize the settings, you can select or clear any of the settings check boxes.
5. Click **Save** to return to the main Profiles page.

   If you created a new profile, you will see the name of the newly created profile in the profiles list.

   If you overwrote a current profile, the same profile name is retained in the list.

   Note: nView Desktop Manager profile (**`.tvp`**) files are saved in the **`Windows\nView`** directory. Depending on the version of the NVIDIA driver previously installed, profiles may also be saved in the **`Documents and Settings\All Users\Application Data\nView_Profiles`** directory.
6. Now you can uninstall your current driver for a driver upgrade.
7. After you restart your computer following an NVIDIA new driver install, you can easily load the saved profile from the Profiles page of nView Desktop Manager.

About Using Saved Profiles in Another Computer

You can easily use any saved profile (**`.tvp`** file in the **`Windows\nView`** directory) from one computer and use it in another computer, if you want. You'll need to copy it to the **`Windows\nView`** directory of a computer that has the NVIDIA ForceWare graphics display driver, etc. installed properly. Then this profile can be loaded from another computer from the nView Desktop Manager Profiles page just as it can from your original computer.

Uninstalling the NVIDIA Display Driver Software

Note: It is highly recommended that you follow the steps in this section to completely uninstall the NVIDIA Display Driver software before updating to a new version of the software.

To uninstall the nView software, follow these steps:

1. From the Windows taskbar, click **Start** > **Settings** > **Control Panel** to open the Control Panel window.
2. Double-click the **Add/Remove Programs** item.
3. Click the **NVIDIA Display Driver** item from the list.
4. Click **Change/Remove**.
5. Click **Yes** to continue.

   A prompt appears asking whether you want to delete all of the saved nView profiles.

   - If you click **Yes**, all of the nView software and all of your saved profiles will be deleted.
   - If you click **No**, the nView software is removed, but the profile files are saved in the `Windows\nView` directory on your hard disk.

   Your system now restarts.

Installing the NVIDIA Graphics Drivers

1. Follow the instructions on the NVIDIA .com Web site driver download page to locate the appropriate driver to download, based on your hardware and operating system.
2. From the driver download page, click the download button.

   The *Download Confirmation* page appears.
3. If you agree to the "License For Customer Use of NVIDIA Software", click the **Agree & Download** button to begin the download.

   The *File Download* dialog appears.
4. Either click **Save** to save the file and then run it from your PC, or click **Run.**

   An extraction path dialog appears prompting you to specify where on your PC you want the driver files to be installed.
5. Click **OK** to use the default location, or click the folder icon and specify an alternate location to install the driver files.

   The files are extracted and then the NVIDIA Installer is launched automatically.
6. At the *License Agreement* page of the Installer, click **Agree and Continue**.
7. Follow the instructions in the NVIDIA Installer to complete the installation.

Note: The driver presents game screenshots while the driver is installing. If you are not connected to the internet during the installation, you may see a "Navigation to the webpage was cancelled" message instead. The message can be ignored and does not affect the installation. The message won't appear if the browser cache is cleared.

Note: The NVIDIA PhysX System Software will not be included in the installation if the same version or a later version is already installed.

Note: Under Windows XP, the NVIDIA driver is installed in "Dualview mode" display. However, note that the second display is not activated by default, but must be enabled.

See "Known Product Limitations" on page 17 for other installation/uninstallation considerations.

Known Product Limitations

This section describes problems that will not be fixed. Usually, the source of the problem is beyond the control of NVIDIA. Following is the list of problems and where they are discussed in this document:

- "No PhysX Acceleration Using the GPU" on page 18
- "Previous Driver Files Remain After Overinstalling with Release 256 or Earlier Drivers" on page 18
- "Using HDMI Audio with Displays that have a High Native Resolution" on page 19
- "Using HDMI/DisplayPort Displays that do not Support Audio" on page 19
- "Using HDMI/DisplayPort Audio in Dualview or Clone Mode Configurations" on page 20
- "GPU Runs at a High Performance Level (full clock speeds) in Multi-display Modes" on page 20
- "GeForce GTX 295 Fan Control and NVIDIA Control Panel Performance Group version 6.03.06.00" on page 20
- "1280x1024 @ 60 Hz not Available on BenQ FP241W Monitors" on page 21
- "GeForce 6 and 7 Series Cards Cannot Output Interlaced Signals in SLI Mode [251457]" on page 21
- "Image Sharpening Control not Available with GeForce 8 Series and Later GPUs" on page 21
- "Display Output Selection not Available on "Bridgeless" SLI" on page 22
- "More Monitors are Listed in the Windows Device Manager than are Actually Connected" on page 22
- "DirectX Fails When Detaching/Reattaching Displays in Dualview Mode" on page 22
- "OpenGL Viewport Scaling Problem in Horizontal Span Mode" on page 22
- "Video Playback in nView Clone and Span Modes" on page 23
- "No Antialiasing of 3DMark03 Image Quality Screen Captures" on page 23
- "Medal of Honor Under Windows XP / Windows 2000" on page 24
- "Windows XP/2000 Issue with Settings Tab Monitor Positioning" on page 24
- "Antialiasing Problems With Certain Applications" on page 24
- "Poor Quality S-Video Output on Some TVs" on page 25
- "AGP and PCI-E Programs May Hang With AMD K7 and K8 Processors" on page 25
- "Desktop Manager Does Not Re-Center Logon Screen" on page 26

No PhysX Acceleration Using the GPU

If after installing the PhysX System Software you find that there is no PhysX acceleration on supported applications, repeat the PhysX setup as follows:

1. Reboot the PC.
2. Open the NVIDIA Control Panel and then, under 3D Settings, click **Set PhyX configuration** to open that page.
3. Under **Select a PhysX processor**, verify that either **auto-select** or a specific NVIDIA GPU is selected.
4. Click **Apply**.

Previous Driver Files Remain After Overinstalling with Release 256 or Earlier Drivers

Issue

When installing a Release 256 or earlier driver over a Release 260 or later driver, some of the previous driver files remain on the hard disk, resulting in potential conflicts.

Workaround

After installing a Release 260 or later driver, you must uninstall the driver first before installing a Release 256 or earlier driver.

Uninstalling Drivers Using Device Manager is not Supported

Issue

On all supported versions of Microsoft Windows, uninstalling the NVIDIA driver using the Windows Device Manager may not remove associated files or applications.

Explanation

Microsoft has confirmed that this behavior is by design.

If you wish to uninstall the NVIDIA driver, it is recommended that you do so using Add and Remove programs.

See the Microsoft KB article 2278714.

Using HDMI Audio with Displays that have a High Native Resolution

To use HDMI audio with some displays that have a native resolution higher than 1920x1080, you must set the display to a lower HD resolution.

Some HDMI displays have a native resolution that exceeds the maximum supported HD mode. For example, displays with a native resolution of 1920x1200 exceed the maximum supported HD mode of 1920x1080.

Applying this native mode results in display overscan which cannot be resized using the NVIDIA Control Panel since the mode is not an HD mode.

To avoid this situation and provide a better user experience, the driver treats certain TVs– such as the Viewsonic VX2835wm and the Westinghouse LVM- 37w3–as a DVI monitor when applying the native mode. Because the driver does not treat the TV as an HDMI in this case, the HDMI audio is not used.

Using HDMI/DisplayPort Displays that do not Support Audio

Some HDMI/DisplayPort displays do not support audio, or have issues with GeForce 9-series and earlier,and GeForce GTX 200-series NVIDIA graphics cards.

The NVIDIA driver attempts to identify such displays and automatically disables the audio. For example, the NVIDIA driver disables HDMI audio for all Philips HDMI TVs, as these have been identified as having issues with GeForce 9 series and earlier, and GeForce GTX 200-series NVIDIA graphics cards.

There may be cases where either the driver disables audio even though there is no problem, or does not disable the audio when in fact the audio does not work. The following sections describe these situations and provides guidance for handling them.

Corrupted video and no audio

The driver has not disabled audio and the display's audio signal is incompatible with the graphics card, causing video corruption.

With a different display connected in order to establish video, disable audio for the HDMI display using the NVIDIA Control Panel-> Change Resolution page. From the connector list, select **HDMI-HDTV (Audio Disabled)**.

Video but no audio

Check the connector list on the NVIDIA Control Panel->Change Resolution page.

- If **HDMI-HDTV (Audio Disabled)** is selected and you want to test whether your HDMI audio does, in fact, work, then select **HDMI-HDTV (Audio Enabled)** and the driver will prompt you with instructions for testing HDMI audio with the display.
- If **HDMI-HDTV (Audio Enabled)** is selected, then the driver has not successfully detected that an incompatible display is connected.

  Future drive versions will properly identify such displays and disable audio.
- If there is no HDMI connector option in the NVIDIA Control Panel->Change Resolution page, the display does not support audio and has properly reported this to the NVIDIA driver.

Using HDMI/DisplayPort Audio in Dualview or Clone Mode Configurations

Two Audio-enabled Ports

In a multi-display configuration where both HDMI/DisplayPort audio ports are enabled, only the primary display will provide the audio.

One Audio-enabled Port

In a multi-display configuration where only one audio port is enabled, such as when one display is a DVI display, then the HDMI/DisplayPort display can provide the audio whether is it the primary or secondary display.

GPU Runs at a High Performance Level (full clock speeds) in Multi-display Modes

This is a hardware limitation and not a software bug. Even when no 3D programs are running, the driver will operate the GPU at a high performance level in order to efficiently drive multiple displays. In the case of SLI or multi-GPU PCs, the second GPU will always operate with full clock speeds; again, in order to efficiently drive multiple displays. Today, all hardware from all GPU vendors have this limitation.

GeForce GTX 295 Fan Control and NVIDIA Control Panel Performance Group version 6.03.06.00

The GeForce GTX 295 fan control does not function properly when using the NVIDIA Control Panel Performance Group version 6.03.06.00. For proper fan control, use version 6.03.12.00 or later.

1280x1024 @ 60 Hz not Available on BenQ FP241W Monitors

Even though the monitor EDID lists 1280x1024 @ 60 Hz, the screen turns blank when using an HDMI connection. This is an issue with the monitor and not the NVIDIA driver.

Because of this issue with the monitor, the NVIDIA driver blocks the problem mode (1280x1024 @ 60 Hz) and makes it unavailable.

GeForce 6 and 7 Series Cards Cannot Output Interlaced Signals in SLI Mode [251457]

▶ **Problem**

Rendering problems and instability occur when outputting interlaced modes (480i, 576i and 1080i) over the Y Pr Pb component and DVI outputs.

▶ **Explanation**

This is a hardware limitation in SLI mode only and cannot be fixed via a driver update.

▶ **Resolution**

Due to this issue, starting in driver version 162.18 in Windows XP, the driver will automatically disable SLI mode when using the 480i, 576i and 1080i modes over all connectors on the GeForce 6 and 7 series GPUs.

To re-enable SLI mode, you must choose a non-interlaced output mode and reboot your computer.

- GeForce 8 series GPUs do not have this hardware limitation and you can output all HDTV interlaced and progressive scan outputs in SLI mode.
- The 480p, 576p, 720p, and 1080p progressive scan modes do not have this issue in SLI mode and are not affected by this change.

Image Sharpening Control not Available with GeForce 8 Series and Later GPUs

With GeForce 8 Series and later graphics cards, the **Image sharpening** slider on the NVIDIA Control Panel-> Display->Adjust Desktop Color Settings page is grayed out.

This control is intentionally disabled because image sharpening is not supported on GeForce 8 series and later GPUs.

Display Output Selection not Available on “Bridgeless” SLI

On graphics cards that can operate in SLI mode without the SLI connector (such as the GeForce 6600), you cannot select which monitor to display the output. On the SLI display property page, the option box to select the output display is not available.

More Monitors are Listed in the Windows Device Manager than are Actually Connected

- **Problem**

  Many monitors are listed in the Windows Device Manager hardware tree even when only a few are actually connected or enabled.

- **Explanation**

  NVIDIA chooses to expose all potential monitors even though they are not yet connected. Such an implementation makes multiple device handling easier in certain situations, such as when a user unplugs a monitor and plugs another one in at a different port.

  The only impact is a cosmetic in the plug-and-play manager. There is no functional impact at all and the GDI is not aware of the multiple monitor listing.

DirectX Fails When Detaching/Reattaching Displays in Dualview Mode

This problem can be duplicated as follows:

1. Enable both displays in Dualview mode.
2. Detach monitor 2 and apply settings.
3. Reattach monitor 2 and apply settings.

   DirectX runtime fails on monitor 1.

This is not an NVIDIA bug, but a limitation in the operating system where DirectX does not enumerate the second device. DirectX can be restored to both displays by rebooting the system

OpenGL Viewport Scaling Problem in Horizontal Span Mode

With nView Horizontal Span mode enabled, when opening an OpenGL model in a viewport, the model image is scaled too large to fit in the viewport. The problem occurs with such applications as Maya 5.0 and 3D Studio MAX 4.26.

This is not an NVIDIA bug, but a limitation in the application's ability to properly maintain the aspect ratio in Horizontal Span mode.

Video Playback in nView Clone and Span Modes

▶ **Problem**

With nView Clone or Span mode enabled, video playback appears on only one display under the following conditions:

- Under nView Clone mode, when full-screen video mirror is not used.
- Under nView Span mode, when full-screen video mirror is not used and the video is positioned to span across both monitors.

▶ **Explanation**

With applications that render using the hardware overlay—such as DirectX applications—the default driver behavior is to enable the hardware overlay when nView Clone or Span mode is enabled.

Because the driver supports only one hardware overlay, the video appears on only one display.

No Antialiasing of 3DMark03 Image Quality Screen Captures

▶ **Problem**

After enabling antialiasing from the NVIDIA Properties page, 3DMark03 screen captures—obtained using the application's screen capture function—might not be antialiased.

▶ **Explanation**

This is not an NVIDIA bug, but rather a result of different methods used to render antialiased images.

Depending on a combination of factors, the driver may take advantage of the NVIDIA hardware's ability to bypass the front buffer while rendering an antialiased image. In this case, the front buffer does not contain antialiased data, so if an application takes data from the front buffer—as is the case with 3DMark03's Image Quality screen captures—then the resulting image is not antialiased.

To accommodate applications that request use of the front buffer, the NVIDIA software can provide the antialiased data in a buffer to the application. Since this negates the advantages of the NVIDIA hardware capability, this support is enabled only when antialiasing is enabled within the application, and not from the NVIDIA control panel.

In all cases when antialiasing is enabled, screen images as well as screen captures obtained using the Print Screen key are always antialiased.

Medal of Honor Under Windows XP / Windows 2000

▶ **Problem**

The Electronic Arts game Medal of Honor uses a hard coded buffer to parse the OpenGL extension string. This can cause a system crash under Windows XP and Windows 2000.

▶ **Workaround**

NVIDIA has implemented Medal of Honor application detection to work around this extension string crash.

Windows XP/2000 Issue with Settings Tab Monitor Positioning

▶ **Problem**

In the Windows **Display Properties > Settings** tab, the secondary monitors cannot be positioned directly above monitor #1 without snapping horizontally to a position diagonal to monitor #1.

▶ **When the Problem Occurs**

The problem occurs when four monitors are connected to the graphics adapter card, but only two of them are enabled.

▶ **Cause and Workaround**

This is a Microsoft—not an NVIDIA—bug, and there is no workaround to correct the positioning of the monitor icons. However, the actual positioning of the displays on the desktop can be corrected using the nView Desktop Manager window as follows:

a Under the Tools tab in the Desktop Manager windows, make sure Automatically Align Displays is checked.

b In the Settings tab, position the appropriate monitor icon above monitor #1, then click **Apply**.

The mouse cursor movement between monitor desktops will correspond to a vertical orientation of the monitors, even though the monitor icons in the Settings tab are diagonal to each other.

Note: This will be the case even if the monitor icons are deliberately positioned diagonal to each other.

Antialiasing Problems With Certain Applications

Antialiasing in the NVIDIA Direct3D driver requires each new frame to be rendered from scratch. This requirement adversely affects applications that render only that portion of the content that has changed since the last frame. A common symptom of this problem is geometric structures that incorrectly disappear and re-appear as the scene shifts.

Poor Quality S-Video Output on Some TVs

NVIDIA drivers differentiate an S-video TV from a composite TV by searching for 75-Ohm loads on the chrominance and luminance lines. If the driver detects only one such load, it assumes that it has a composite TV and drives both chroma and luma onto that line. This approach allows both types of TV to display in color.

Unfortunately, some S-video TVs do not apply the correct load to both lines, causing the driver to detect an S-video TV as a composite. The driver, in turn, sends the lower quality signal to the S-video TV. To work around this problem, use the Control Panel to override the **Auto-select** feature. This can be done following these steps:

1. In the **Settings** tab of the **Display Properties** Control Panel, click **Advanced**.
2. In the **nView** tab, click **Device Settings** and click **Select Output Device**.
3. In the **Device Selection** tab, click the **TV** option.
4. Change the **Video output format** to **S-video**.

AGP and PCI-E Programs May Hang With AMD K7 and K8 Processors

- **Issue**

  Microsoft® Windows® 2000 and Windows XP systems using AMD K7 and K8 processors can hang when an AGP or PCI-E program is used.

- **Root Cause**

  There is a known problem with Microsoft® Windows® 2000 and Windows XP systems using AMD K7 and K8 CPUs that results in the Microsoft operating system allocating overlapping 4M cached pages with 4k write-combined pages. This condition results in undefined behavior and data corruption, and is explicitly disallowed by the AMD CPU manual.

  This problem can affect any device driver in the system that allocates write-combined system memory, but is usually most easily reproduced with graphics drivers since graphics drivers generally make heavy use of write-combined system memory for performance reasons.

- **Resolution**

  Microsoft has a knowledge base article on the issue, the text of which is unfortunately quite outdated. While the article only mentions Windows 2000, AGP, and K7, both the root cause and resolution also apply to Windows 2000 or Windows XP, AGP or PCI-E, and AMD K7 or K8. The article can be found at http://support.microsoft.com/?id=270715.

  The issue is resolved by applying an operating system registry key as described in the referenced article that instructs the Microsoft operating system to not use the 4M pages, thus avoiding the conflict.

The registry key is automatically applied by installation of the latest NVIDIA nForce platform driver package (including 4.57 SMBUS or later). It is imperative for the package to be installed or for the registry key to be applied before the NVIDIA graphics driver or any other device drivers are installed. The registry key takes effect only after an operating system reboot.

Desktop Manager Does Not Re-Center Logon Screen

On Windows XP multi-display systems that are set to nView Span mode, the Windows logon screen is centered on the extended desktop. This usually causes it to be split across two displays, which users may find annoying. Although users can normally use the Desktop Manager to restrict a window's appearance to one display, security restrictions in the operating systems prevent this in the case of the logon screen.

APPENDIX A MODE SUPPORT FOR WINDOWS

This chapter details the Windows modes supported by the Release 337 driver for NVIDIA products. It contains these sections:

- "General Mode Support Information" on page 28
- "Default Modes Supported by GPU for Windows XP" on page 29
- "Modes Supported by TV Encoders" on page 35

General Mode Support Information

The NVIDIA graphics driver includes a standard list of display modes that are supported by default. These modes are listed in the section "Default Modes Supported by GPU for Windows XP" on page 29.

The actual modes available depend on the capabilities of the display. In addition, the NVIDIA graphics driver has a "dynamic EDID detection" capability and will make available *additional* modes that are listed in the display EDID, provided the graphics hardware can support it.

The NVIDIA graphics driver also supports the high resolutions available with the displays listed in Table A.1 as well as the non-standard modes listed in Table A.2.

Table A.1 Modes Supported for High Resolution Displays

Display	Maximum Resolution
Apple 30" Cinema HD Display (Dual link DVI)	2560x1600 @ 60 Hz
Dell WFP 3007 (Dual Link DVI)	2560x1600 @ 60 Hz
HP LP3065 dual-link DVI flat panel	2560x1600 @ 60Hz.

Table A.2 Non-standard Modes Supported

Resolution		
1680 x 1050		
1366 x 768		

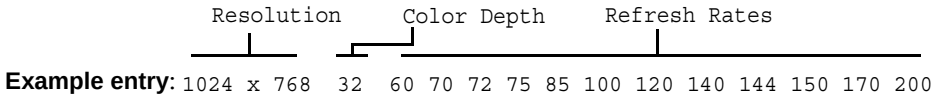
Default Modes Supported by GPU for Windows XP

This section lists the modes that are included by default in the driver INF for the following product families:

▶ "GeForce 700, 600, 500, 400 Series, 300, 200, 100, 9 Series, and 8 Series GPUs" on page 30

Understanding the Mode Format

Figure A.1 gives an example of how to read the mode information presented in this section.



Meaning:
Resolution: 1024 x 768
Color depth: 32 bpp
Refresh rates: 60 Hz, 70 Hz, 72 Hz, 75 Hz, 85 Hz, 100 Hz, 120 Hz, 140 Hz, 144 Hz, 150 Hz, 170 Hz, and 200 Hz

Figure A.1 Mode Format

Note:

- Horizontal spanning modes of 3840x1080 and above, and vertical spanning modes of 1920x2160 and above generally require at least 32 MB of video memory at 32 bpp.
- An "i" next to the refresh rate indicates an interlaced refresh rate.

GeForce 700, 600, 500, 400 Series, 300, 200, 100, 9 Series, and 8 Series GPUs

This sections lists the supported display resolutions, color depths, and refresh rates for the products listed in "Supported NVIDIA Desktop Products" on page 8.

Standard Modes

```
 640 x  480   8      60 70 72 75 85 100 120 140 144 150 170 200 240
 720 x  480   8      60
 720 x  576   8   50 60
 800 x  600   8      60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x  768   8      60 70 72 75 85 100 120 140 144 150 170 200 240
1152 x  864   8      60 70 72 75 85 100 120 140 144 150 170 200
1280 x  720   8      60
1280 x  768   8      60 70 72 75 85 100 120 140 144 150 170
1280 x  800   8      60 70 72 75 85 100 120 140 144 150 170
1280 x  960   8      60 70 72 75 85 100 120 140 144 150 170
1280 x 1024   8      60 70 72 75 85 100 120 140 144 150 170
1360 x  768   8      60 70 72 75 85 100 120 140 144 150 170
1600 x  900   8      60 70 72 75 85 100 120 140 144 150
1600 x 1024   8      60 70 72 75 85 100 120
1600 x 1200   8      60 70 72 75 85 100 120
1680 x 1050   8      60
1920 x 1080   8      60
1920 x 1200   8      60 70 72 75 85 100
1920 x 1440   8      60 70 72 75 85
2048 x 1536   8      60
--------------------------------------------------------------------
 640 x  480  16      60 70 72 75 85 100 120 140 144 150 170 200 240
 720 x  480  16      60
 720 x  576  16   50 60
 800 x  600  16      60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x  768  16      60 70 72 75 85 100 120 140 144 150 170 200 240
1152 x  864  16      60 70 72 75 85 100 120 140 144 150 170 200
1280 x  720  16      60
1280 x  768  16      60 70 72 75 85 100 120 140 144 150 170
1280 x  800  16      60 70 72 75 85 100 120 140 144 150 170
1280 x  960  16      60 70 72 75 85 100 120 140 144 150 170
1280 x 1024  16      60 70 72 75 85 100 120 140 144 150 170
1360 x  768  16      60 70 72 75 85 100 120 140 144 150 170
1600 x  900  16      60 70 72 75 85 100 120 140 144 150
1600 x 1024  16      60 70 72 75 85 100 120
1600 x 1200  16      60 70 72 75 85 100 120
1680 x 1050  16      60
```

```
1920 x 1080  16      60
1920 x 1200  16      60 70 72 75 85 100
1920 x 1440  16      60 70 72 75 85
2048 x 1536  16      60
--------------------------------------------------------------------
 640 x  480  32      60 70 72 75 85 100 120 140 144 150 170 200 240
 720 x  480  32      60
 720 x  576  32   50 60
 800 x  600  32      60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x  768  32      60 70 72 75 85 100 120 140 144 150 170 200 240
1152 x  864  32      60 70 72 75 85 100 120 140 144 150 170 200
1280 x  720  32      60
1280 x  768  32      60 70 72 75 85 100 120 140 144 150 170
1280 x  800  32      60 70 72 75 85 100 120 140 144 150 170
1280 x  960  32      60 70 72 75 85 100 120 140 144 150 170
1280 x 1024  32      60 70 72 75 85 100 120 140 144 150 170
1360 x  768  32      60 70 72 75 85 100 120 140 144 150 170
1600 x  900  32      60 70 72 75 85 100 120 140 144 150
1600 x 1024  32      60 70 72 75 85 100 120
1600 x 1200  32      60 70 72 75 85 100 120
1680 x 1050  32      60
1920 x 1080  32      60
1920 x 1200  32      60 70 72 75 85 100
1920 x 1440  32      60 70 72 75 85
2048 x 1536  32      60
```

Horizontal Spanning Modes

```
1280 x  480   8      60 70 72 75 85 100 120 140 144 150 170 200 240
1600 x  600   8      60 70 72 75 85 100 120 140 144 150 170 200 240
2048 x  768   8      60 70 72 75 85 100 120 140 144 150 170 200 240
2304 x  864   8      60 70 72 75 85 100 120 140 144 150 170 200
2560 x  720   8      60
2560 x  768   8      60 70 72 75 85 100 120 140 144 150 170
2560 x  800   8      60 70 72 75 85 100 120 140 144 150 170
2560 x  960   8      60 70 72 75 85 100 120 140 144 150 170
2560 x 1024   8      60 70 72 75 85 100 120 140 144 150 170
2720 x  768   8      60 70 72 75 85 100 120 140 144 150 170
3200 x  900   8      60 70 72 75 85 100 120 140 144 150
3200 x 1024   8      60 70 72 75 85 100 120
3200 x 1200   8      60 70 72 75 85 100 120
3360 x 1050   8      60
3840 x 1080   8      60
3840 x 1200   8      60 70 72 75 85 100
3840 x 1440   8      60 70 72 75 85
```

```
4096 x 1536   8      60
-----------------------------------------------------------------
1280 x  480  16      60 70 72 75 85 100 120 140 144 150 170 200 240
1600 x  600  16      60 70 72 75 85 100 120 140 144 150 170 200 240
2048 x  768  16      60 70 72 75 85 100 120 140 144 150 170 200 240
2304 x  864  16      60 70 72 75 85 100 120 140 144 150 170 200
2560 x  720  16      60
2560 x  768  16      60 70 72 75 85 100 120 140 144 150 170
2560 x  800  16      60 70 72 75 85 100 120 140 144 150 170
2560 x  960  16      60 70 72 75 85 100 120 140 144 150 170
2560 x 1024  16      60 70 72 75 85 100 120 140 144 150 170
2720 x  768  16      60 70 72 75 85 100 120 140 144 150 170
3200 x  900  16      60 70 72 75 85 100 120 140 144 150
3200 x 1024  16      60 70 72 75 85 100 120
3200 x 1200  16      60 70 72 75 85 100 120
3360 x 1050  16      60
3840 x 1080  16      60
3840 x 1200  16      60 70 72 75 85 100
3840 x 1440  16      60 70 72 75 85
4096 x 1536  16      60
-----------------------------------------------------------------
1280 x  480  32      60 70 72 75 85 100 120 140 144 150 170 200 240
1600 x  600  32      60 70 72 75 85 100 120 140 144 150 170 200 240
2048 x  768  32      60 70 72 75 85 100 120 140 144 150 170 200 240
2304 x  864  32      60 70 72 75 85 100 120 140 144 150 170 200
2560 x  720  32      60
2560 x  768  32      60 70 72 75 85 100 120 140 144 150 170
2560 x  800  32      60 70 72 75 85 100 120 140 144 150 170
2560 x  960  32      60 70 72 75 85 100 120 140 144 150 170
2560 x 1024  32      60 70 72 75 85 100 120 140 144 150 170
2720 x  768  32      60 70 72 75 85 100 120 140 144 150 170
3200 x  900  32      60 70 72 75 85 100 120 140 144 150
3200 x 1024  32      60 70 72 75 85 100 120
3200 x 1200  32      60 70 72 75 85 100 120
3360 x 1050  32      60
3840 x 1080  32      60
3840 x 1200  32      60 70 72 75 85 100
3840 x 1440  32      60 70 72 75 85
4096 x 1536  32      60
```

Vertical Spanning Modes

```
 640 x  960   8      60 70 72 75 85 100 120 140 144 150 170 200 240
 800 x 1200   8      60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x 1536   8      60 70 72 75 85 100 120 140 144 150 170 200 240
```

```
1152 x 1728   8      60 70 72 75 85 100 120 140 144 150 170 200
1280 x 1440   8      60
1280 x 1536   8      60 70 72 75 85 100 120 140 144 150 170
1280 x 1600   8      60 70 72 75 85 100 120 140 144 150 170
1280 x 1920   8      60 70 72 75 85 100 120 140 144 150 170
1280 x 2048   8      60 70 72 75 85 100 120 140 144 150 170
1360 x 1536   8      60 70 72 75 85 100 120 140 144 150 170
1600 x 1800   8      60 70 72 75 85 100 120 140 144 150
1600 x 2048   8      60 70 72 75 85 100 120
1600 x 2400   8      60 70 72 75 85 100 120
1680 x 2100   8      60
1920 x 2160   8      60
1920 x 2400   8      60 70 72 75 85 100
1920 x 2880   8      60 70 72 75 85
2048 x 3072   8      60
------------------------------------------------------------------
 640 x  960  16      60 70 72 75 85 100 120 140 144 150 170 200 240
 800 x 1200  16      60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x 1536  16      60 70 72 75 85 100 120 140 144 150 170 200 240
1152 x 1728  16      60 70 72 75 85 100 120 140 144 150 170 200
1280 x 1440  16      60
1280 x 1536  16      60 70 72 75 85 100 120 140 144 150 170
1280 x 1600  16      60 70 72 75 85 100 120 140 144 150 170
1280 x 1920  16      60 70 72 75 85 100 120 140 144 150 170
1280 x 2048  16      60 70 72 75 85 100 120 140 144 150 170
1360 x 1536  16      60 70 72 75 85 100 120 140 144 150 170
1600 x 1800  16      60 70 72 75 85 100 120 140 144 150
1600 x 2048  16      60 70 72 75 85 100 120
1600 x 2400  16      60 70 72 75 85 100 120
1680 x 2100  16      60
1920 x 2160  16      60
1920 x 2400  16      60 70 72 75 85 100
1920 x 2880  16      60 70 72 75 85
2048 x 3072  16      60
------------------------------------------------------------------
 640 x  960  32      60 70 72 75 85 100 120 140 144 150 170 200 240
 800 x 1200  32      60 70 72 75 85 100 120 140 144 150 170 200 240
1024 x 1536  32      60 70 72 75 85 100 120 140 144 150 170 200 240
1152 x 1728  32      60 70 72 75 85 100 120 140 144 150 170 200
1280 x 1440  32      60
1280 x 1536  32      60 70 72 75 85 100 120 140 144 150 170
1280 x 1600  32      60 70 72 75 85 100 120 140 144 150 170
1280 x 1920  32      60 70 72 75 85 100 120 140 144 150 170
1280 x 2048  32      60 70 72 75 85 100 120 140 144 150 170
1360 x 1536  32      60 70 72 75 85 100 120 140 144 150 170
1600 x 1800  32      60 70 72 75 85 100 120 140 144 150
```

1600 x 2048	32	60 70 72 75 85 100 120
1600 x 2400	32	60 70 72 75 85 100 120
1680 x 2100	32	60
1920 x 2160	32	60
1920 x 2400	32	60 70 72 75 85 100
1920 x 2880	32	60 70 72 75 85
2048 x 3072	32	60

Modes Supported by TV Encoders

Table A.3 and Table A.4 list the NTSC, PAL, and HDTV TV-Out modes supported by the NVIDIA driver.

Table A.3 Mode Support for S-Video and Composite Out

Resolution	Bit depth	Comments
320x200	8, 16, 32	DirectDraw mode; not selectable as a Windows desktop
320x240	8, 16, 32	DirectDraw mode; not selectable as a Windows desktop
640x400	8, 16, 32	DirectDraw mode; not selectable as a Windows desktop
640x480	8, 16, 32	
720x480	8, 16, 32	Overscans (for video)
720x576	8, 16, 32	Overscans (for video)
800x600	8, 16, 32	
1024x768	8, 16, 32	Conexant 25871 only

Table A.4 Mode Support for Component YPrPb Out and DVI Out

Resolution	Comments
480i (SDTV)	Supported on graphics boards with Conexant 875 or Philips 7108 TV encoders and compatible connectors, and compatible GeForce 6 Series and GeForce 7 Series GPUs.
480p (EDTV)	
720p (HDTV)	
1080i (HDTV)	
576i (PAL)	
576p (PAL)	

The driver supports manual overscan correction for component and DVI outputs. See the *ForceWare Graphics Driver User's Guide* for instructions on how to use the overscan correction features in the control panel.

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